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10/507,298	07/12/2005	Nikolaus Schunk	MAIKP174WOUS	4907

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ESCHWEILER & ASSOCIATES LLC
629 EUCLID AVENUE, SUITE 1000
NATIONAL CITY BUILDING
CLEVELAND, OH 44114

EXAMINER

KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
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2883

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/507,298	Applicant(s) SCHUNK, NIKOLAUS	
	Examiner Kianni C. Kaveh	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 6, 7 and 13 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-12, 14-18 and 21 is/are rejected.
- 7) ☐ Claim(s) 21 is/are objected to.
- 8) ☒ Claim(s) 19 and 20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.



Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

Claim 6 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the encapsulation material forms an integrated lens on the side facing the coupling area in combination with the rest of the limitations of the base claim. Claim 7 is also allowable by virtue of dependence.

Claim 13 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the main circuit board is used as a heat sink for the submount and/or for the electrical drive and/or receiving circuit which is arranged on the submount, with the submount having plated holes which are also used for heat conduction in combination with the rest of the limitations of the base claim.

Claim Objections

Claim 21 is objected to because of the following informalities: in the 2nd line of claim the phrase 'the main circuit board' lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2883

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 8-12, and 14-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al. (US 6422766).

Althaus teaches an optoelectronic module (shown in at least fig. 1) comprising: a transmitting and/or receiving element (shown in at least fig. 1, item light transmit/receive element), a mount for supporting the transmitting and/or receiving element (shown in at least fig. 1, item support for light transmit/receive element), a holding and coupling part for receiving the transmitting and/or receiving element and which is at least partially filled with an encapsulation material (see fig. 3b, and 4th parag., in which filling material is resin), and which has a coupling area for receiving an optical waveguide 23, and an electrical drive and/or receiving circuit 27 coupled to the transmitting and/or receiving element (see fig. 9, item control/drive circuit 27 and col. 9, last parag.-col. 10, 2nd parag.), wherein the encapsulation material surrounds the transmitting and/or receiving element and is located at least partially in the holding and

Art Unit: 2883

coupling part (see at least col. 4, line 38-col. 5, line 18, wherein plastic/resin foaming encapsulates the transmit/receiving elements), wherein the electrical control and/or receiving circuit is arranged outside the holding and coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area (shown in at least figures 1, 3, 9 and 10, item circuit/receiving circuit arranged outside the holding and/or coupling part on a submount), and wherein the mount is arranged at right angles to the submount (as shown in at least fig. 3, items 21 and 19, in which mount with respect to submount is in right angles).

However, in above embodiment Althaous does not explicitly state that the circuit control circuit is drive circuit. Although it can be argued that the control circuit is inherently driver circuit to drive/control the receiving and transmitting module, nonetheless, it is obvious/well-known to those of ordinary skill in the art when the invention was made that a control circuit controlling the circuit functions is drive circuit since such drive circuit would provide high data rate transmission (see col. 1).

Althaous further teaches wherein the holding and coupling part forms a cylindrical cutout, one of whose ends contains the transmitting and/or receiving element, and whose other end forms the coupling area for an optical waveguide (shown in at least fig. 1); wherein the mount is fitted only with the transmitting and/or receiving element or with the transmitting element and a monitor diode (shown in at least fig. 1, item 2); wherein the mount is a leadframe, which provides an electrical link for the transmitting and/or receiving element and

is electrically connected to the submount (shown in at least fig. 1, item 3/5); the leadframe runs at right angles to the longitudinal axis of the coupling area, at least in the area of the holding and coupling part (shown in at least fig. 1, item 3/5); wherein the module is mechanically coupled to a plug housing wherein the module is mechanically coupled to a naked waveguide adaptor (shown in at least fig. 1-3 item 23); an optical waveguide is firmly clamped by means of a clamp in an area of the naked waveguide adaptor which is in the form of a trough (shown in at least fig. 1-4, item waveguide clam); the naked waveguide adaptor is formed by an extension to the cylindrical coupling area (shown in at least fig. 1-3 item 23); wherein the submount can be mounted on a main circuit board as a surface mount device (see at least fig. 9, item main control/drive circuit and col. 9, line 55-col. 10, line 24); wherein the holding and coupling part and/or the submount have/has self-coupling structures which allow automatic adjustment of the elements with respect to one another and/or with respect to a main circuit board (shown in at least fig. 1-3 and see parag 19 of summary section); wherein a housing cover is provided and surrounds the submount with the electrical drive and/or receiving circuit, and/or that end of the holding and coupling part which faces away from the coupling area (shown in at least fig. 1-3, item housing cover); wherein the holding and coupling part and/or the housing cover are/is provided with an electrically conductive layer, and/or are/is composed of a conductive plastic material (see at least fig. 1-3 and see at least col. 4, line 38-col. 5, line 18, wherein plastic/resin foaming encapsulates the transmit/receiving elements) wherein the holding and coupling part is in the form of a double chamber and, in parallel, separate

areas, has firstly a transmitting element and secondly a receiving element, each of which can be coupled via a separate coupling area to an optical waveguide (shown in at least fig. 10; double chamber with waveguide coupling; note that parallel is a broad term in which until a frame of a reference is not provided can be parallel in a given direction); wherein the submount is arranged underneath the coupling area of the holding and coupling part shown in at least fig. 1o).

Claims 1-5, 8-12, and 14-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isono et al. (Us 7050678).

Isono teaches an optoelectronic module (shown in at least fig. 3) comprising: a transmitting and/or receiving element (shown in at least fig. 3, item light transmit/receive element), a mount for supporting the transmitting and/or receiving element (shown in at least fig. 3, item support for light transmit/receive element), a holding and coupling part for receiving the transmitting and/or receiving element and which is at least partially filled with an encapsulation material (see fig. 25, item resin in 141 and also parag. 141 of detailed disclosure), and which has a coupling area for receiving an optical waveguide 6, and an electrical drive and/or receiving circuit coupled to the transmitting and/or receiving element (see at least fig. 10 and parag. 61 of detailed disclosure), wherein the encapsulation material surrounds the transmitting and/or receiving element and is located at least partially in the holding and coupling part (see fig. 25. item resin 141 and also resin surrounding the elements in at least fig. 3-7), wherein the electrical control and/or receiving circuit is arranged outside the

holding and coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area (shown in at least figures 4-5 item circuit/receiving circuit arranged outside the holding and coupling part on a submount), and wherein the mount is arranged at right angles to the submount (as shown in at least fig. 3, items mount with respect to submount is in right angles); Isono further teaches wherein the holding and coupling part forms a rectangular cutout, one of whose ends contains the transmitting and/or receiving element, and whose other end forms the coupling area for an optical waveguide (shown in at least fig. 3).

However, in above embodiment Isono does not explicitly state that the circuit control circuit is drive circuit and that the above rectangular is cylindrical. It is well known to those of ordinary skill in the art when the invention was made that a control circuit controlling the circuit functions is drive circuit and that as a matter of design choice to make the shape of the cutout conventionally cylindrical, since such device would provide high data rate transmission such as Ethernet (see col. 1).

Isono further teaches wherein the mount is fitted only with the transmitting and/or receiving element or with the transmitting element and a monitor diode (see parag. 102 of detail, item 127); wherein the mount is a leadframe, which provides an electrical link for the transmitting and/or receiving element and is electrically connected to the submount (shown in at least fig. 1, item 12/12a); the leadframe runs at right angles to the longitudinal axis of the coupling area, at least in the area of the holding and coupling part (shown in at least fig. 3, item 12/12a); wherein the module is mechanically coupled to a plug housing wherein the module is mechanically coupled to

a naked waveguide adaptor (shown in at least fig. 1-3 item waveguide 6); an optical waveguide is firmly clamped by means of a clamp in an area of the naked waveguide adaptor which is in the form of a trough (shown in at least fig. 1-4, item waveguide clam); the naked waveguide adaptor is formed by an extension to the cylindrical coupling area (shown in at least fig. 1-3 item waveguide); wherein the submount can be mounted on a main circuit board as a surface mount device (shown in at least fig. 4-5); wherein the holding and coupling part and/or the submount have/has self-coupling structures which allow automatic adjustment of the elements with respect to one another and/or with respect to a main circuit board (shown in at least fig. 3); wherein a housing cover is provided and surrounds the submount with the electrical drive and/or receiving circuit, and/or that end of the holding and coupling part which faces away from the coupling area (shown in at least fig. 1-3, item housing cover); wherein the holding and coupling part and/or the housing cover are/is provided with an electrically conductive layer, and/or are/is composed of a conductive plastic material (see at least fig. 3 and see parag. 141 of detailed disclosure) wherein the holding and coupling part is in the form of a double chamber and, in parallel, separate areas, has firstly a transmitting element and secondly a receiving element, each of which can be coupled via a separate coupling area to an optical waveguide (shown in at least fig. 25, double chamber with waveguide coupling; note that parallel is a broad term in which until a frame of a reference is not provided can be parallel in a given direction); wherein the submount is arranged underneath the coupling area of the holding and coupling part shown in at least fig. 1o).

Response to Arguments and Amendment

Applicant's argument filed on 4/27/07 have been fully considered but they are not persuasive.

Applicant alleges that neither Althaus nor Isono teach the following limitations: an electrical drive and/or receiving circuit coupled to the transmitting and/or receiving element, wherein the submount can be mounted on a main circuit board as a surface mount device; wherein the electrical control and/or receiving circuit is arranged outside the holding and coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area ; and wherein the mount is arranged at right angles to the submount; wherein the holding and coupling part forms a cylindrical cutout, one of whose ends contains the transmitting and/or receiving element, and whose other end forms the coupling area for an optical waveguide; and that further Isono does not teach wherein the mount is a leadframe, which provides an electrical link for the transmitting and/or receiving element and is electrically connected to the submount.

The Examiner responds that indeed Althaus teaches an electrical drive and/or receiving circuit 27 coupled to the transmitting and/or receiving element (see fig. 9, item control/drive circuit 27 and col. 9, last parag.-col. 10, 2nd parag.); wherein the submount can be mounted on a main circuit board as a surface mount device (see at least fig. 9, item main control/drive circuit and col. 9, line 55-col. 10, line 24);

wherein the electrical control and/or receiving circuit is arranged outside the holding and coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area (shown in at least figures 1, 3, 9 and 10, item circuit/receiving circuit arranged outside the holding and/or coupling part on a submount) and wherein the mount is arranged at right angles to the submount (as shown in a least fig. 3, items 21 and 19, in which mount with respect to submount is in right angles); herein the holding and coupling part forms a cylindrical cutout, one of whose ends contains the transmitting and/or receiving element, and whose other end forms the coupling area for an optical waveguide (shown in at least fig. 1)

And that Isono also teaches an electrical drive and/or receiving circuit coupled to the transmitting and/or receiving element (see at least fig. 10 and parag. 61 of detailed disclosure); wherein the submount can be mounted on a main circuit board as a surface mount device (shown in at least fig, 4-5); wherein the electrical control and/or receiving circuit is arranged outside the holding and coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area (shown in at least figures 4-5 item circuit/receiving circuit arranged outside the holding and coupling part on a submount) and wherein the mount is arranged at right angles to the submount (as shown in a least fig. 3, items mount with respect to submount is in right angles); wherein the mount is a leadframe, which provides an electrical link for the transmitting and/or receiving element and is electrically connected to the submount (shown in at least fig. 1, item 12/12a)

- Applicant is kindly advised to appropriately narrow the scope of the invention in order to allow the case.

THIS ACTION IS MADE FINAL

This action in response to applicant's amendment made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kianni C. Kaveh whose telephone number is 571-272-2417. The examiner can normally be reached on 9:30-19:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2883

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Cyrus Kianni
Primary Patent Examiner
Group Art Unit 2883

K. CYRUS KIANNI
PRIMARY PATENT EXAMINER

July 3, 2007


